When a man is diagnosed with prostate cancer, he is not alone. Prostate cancer occurs in about 1 in 7 men in their lifetime (American Cancer Society, 2015). The most common treatments for organ-contained prostate cancer are radical prostatectomy [surgery] and radiation therapy. Both treatments are associated with excellent outcomes in terms of cancer control for the right patients (American Cancer Society, 2015). The good news is that the large majority of men with organ contained prostate cancer will survive prostate cancer. The challenging news is that many of those men will have sexual side effects that may impact their quality of life.

Sexual side effects may include dry ejaculation, penile shrinkage, and erectile dysfunction (Albaugh, 2012). Erectile dysfunction after prostate cancer treatment is common, with many varied statistics for prevalence. For example, a population-based study reported that 78% of men (average age= 69) continued to struggle with erectile dysfunction 2 years after radical prostatectomy (surgery) and 72% of men were still struggling 5 years after surgery (Penson et al., 2008). The National Institute of Health (NIH) identified the definition of erectile dysfunction as the “inability to attain and/or maintain a penile erection sufficient for satisfactory sexual performance” (NIH Consensus Development Panel on Impotence, 1993) and this definition was subsequently accepted by the World Health Organization and the International Consultation on Urologic Disease (Jardin et al., 2000). Ultimately, when any man is struggling with sex after prostate cancer
treatment, it
doesn’t matter to him what the statistics say about how
many men have these problems.

**Every man and his partner are different and may be in
different places in their lives in terms of sex and intimacy.** Although some people remain sexually active throughout life, some do not. If intimacy and sex were a priority and important before prostate cancer treatment, they can remain important and sex can remain enjoyable after prostate cancer treatment. It is up to each individual man and/or his partner as to how he wants to move forward with sex and intimacy. This article is specifically written for men and their partners who wish to continue to have an intimate sexual relationship after prostate cancer treatment.

Intimacy can be defined as the process by which two people attempt to move towards communication on a deeper level and it may include verbal and nonverbal communication (Hatfield, 1982). Sex is described in this article as any type of genital stimulation for the purpose of pleasure. **Sex and intimacy are intertwined, but they are two separate concepts.** After prostate cancer treatment, intimacy and sex can be different, but still enjoyable. Most men who have undergone prostate surgery or radiation without androgen deprivation therapy will continue to have a normal sex drive. So the desire for sex is still there, but the mechanics of getting an adequate blood-filled engorged penis are no longer cooperating in some men.

During surgery the nerves which transmit signals for erections are dissected off the prostate (with typical nerve sparing surgery) and left in the prostatic bed. The nerves were never meant to be touched and this surgical manipulation leads to inflammation and neuropraxia (the nerves are there, but they don’t function). After radiation therapy is completed, the nerves for erections can eventually be impacted
by the radiation, and erectile function may diminish. This is because the nerves for erections are not working properly to transmit information. After surgery or radiation for prostate cancer, the signal between the brain and penis may no longer be clear so the penis does not engorge with blood and become erect.

Some men also notice penile shrinkage after surgery, which is thought to be related to increased muscle tone immediately following surgery and then muscle atrophy from lack of erections (Gontero et al., 2007; Kohler et al., 2007). The shrinkage can be transient, but if erections do not return, it can be permanent. The nerves for the climax sensation lie out further than the nerves for erections and so most men will continue to enjoy the climax feeling, even without any erection. Although most men are able to and continue to enjoy orgasm/climax post prostate cancer treatment, some men describe the climax sensation as similar or diminished, albeit still enjoyable. A small amount of men report improved orgasm after prostatectomy. After radiation therapy, the sexual changes occur slowly over time (often not for 6 months after radiation treatment) as compared to the immediate erectile dysfunction that may occur after radical prostatectomy. Erectile dysfunction, changes in orgasm/climax, and penile shrinkage may also occur after radiation therapy.

In the face of sexual side effects after prostate cancer treatment, the focus becomes how to reclaim intimacy and sex. Although it may be challenging, many men go on to have fulfilling, intimate sex lives. Probably one of the most difficult things to do is to re-align thinking about intimacy, sex, and erections. Although intimacy, sex, and erections are intertwined, intimacy and sex can be enjoyed, and occur, without erections. Masters and Johnson did landmark research to determine that women do not need a hard penis to reach orgasm and climax (Masters & Johnson, 1970, 1986).

Most men with erectile dysfunction after prostate
cancer treatment continue to enjoy orgasm and climax. If sex in the later stages of life is only about pleasure (no longer about reproduction) and there are many ways to experience pleasure that do not require an erection, then men and their partners can have pleasure and orgasms without hard erections. Anxiety produces adrenaline and adrenaline is part of the fight or flight response, so typically it will diminish erectile function. The more a man worries about erectile hardness, the more he struggles with hardness. It may be helpful to seek professional help from a therapist to help a man come to terms with the challenges of sex and intimacy after prostate cancer treatment.

In addition to therapy to deal with sexual issues, depression, or anxiety, there are several treatments for erectile dysfunction. Some of the treatments include various oral agents called PDE5 Inhibitors (Sildenafil, Vardenafil, Tadalafil, and Avanafil), the vacuum constriction device, the intraurethral suppository, and penile injections. The penis is mostly made up of muscle. Penile rehabilitation is used to get the penis back into shape after surgery or radiation (similar to how cardiac rehabilitation is used to get the heart in shape after a heart attack). The goal of penile rehabilitation is to improve blood flow to the penis, and therefore enhance muscle activity of the muscles surrounding the blood vessels in the penis through regular stimulation and/or the use of erectile function treatments (such as pills, the vacuum device, intraurethral suppositories, or penile injections). The muscles surrounding the blood vessels of the penis contract and relax as blood engorges and leaves the penis. When the penis becomes fuller, thicker, and/or harder with stimulation, the muscles move around the blood vessels. This may help preserve muscle function while the nerves are recovering after surgery or not conducting as well after radiation therapy.

All treatments have pros and cons and no treatment is
right for everyone. Men must understand the positive and negative aspects of each treatment and decide on the best option for them. Some men may decide to enjoy the many ways of having sex, intimacy, and climax without erections and the erectile dysfunction treatments, which are not needed for nonpenetrative types of sex. Table 1 identifies some of the pros and cons to each treatment.

<table>
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<tr>
<th>Treatment</th>
<th>Pros</th>
<th>Cons</th>
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<tr>
<td>Oral PDE5 inhibition (Viagra®, Cialis®, Levitra®, tadalafil, Stendra®, avanafil)</td>
<td>- Quick and easy to administer - Suitable for travel</td>
<td>- Poor efficacy in men after prostatectomy - Expensive - Side effects possible (headache, nasal congestion, flushing, stomach ulcer) - Not everyone can take these (i.e., men who take nitrites)</td>
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<tr>
<td>Vacuum constriction device (Penile Tug® sleeve, Edward®)</td>
<td>- Non-invasive - High efficacy rates - Few patient ages or conditions after treatment</td>
<td>- May be incorporated into baseline - Concerns about compounding - Limited to males who are flexible</td>
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<tr>
<td>Intraurethral suppository (MSM)</td>
<td>- Simple to use - Less invasive than injections</td>
<td>Medication does not work well enough in most cases - Expensive - Side effects may occur (nausea, headache, increased heart rate, dizziness, and dizziness) - Some patients uncomfortable with putting medication in urethra</td>
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<tr>
<td>PDE5 inhibitors (phosphodiesterase type 5 inhibitors)</td>
<td>- High efficacy rates - Reliable treatment - Few dosage needs to treat erections</td>
<td>Inflammation need to inject the penis each time for erections - Side effects possible (pain, burning, swelling, and redness) - Need to keep some medications without refrigeration - Difficulty in cavernosal and intracavernosal compounds - Transient challenges when some medications must be refrigerated</td>
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<tr>
<td>PDE5 implant (Twin Step®, AMS®)</td>
<td>- High efficacy rate - High satisfaction rates - No travel issues</td>
<td>Permanent changes to the structure of the penis - Side effects (pain, infection, mechanical failure, disconnection) - Risk of impotence and erection of the disc (through the disc) - Surgerydone as any surgery</td>
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The most popular treatments are pills because they are simple and discreet. However, they do not always work after prostate cancer treatment because the peripheral nerves are negatively impacted by surgery, radiation, or both. The lack of proper nerve impulse conduction causes communication issues between brain and penis leading to lack of the blood engorgement required for erections. Pills only work with sexual stimulation and if the communication is not working between brain and penis, the penis will not respond. As nerves recover after surgery (which may take 1-2 years), the communication between brain and penis may improve, possibly leading to better engorgement and erectile responses with or without pills. As radiation eventually
impacts the nerves for erections (which may take 3-12 months), communication between the brain and penis may diminish leading to decreased erectile function with or without pills. The pills have to be taken properly for maximum effect (typically on an empty stomach and waiting 1-2 hours for maximum effect).

The second most prescribed treatment for erectile dysfunction after prostate cancer treatment is the vacuum constriction device, which requires excellent one-on-one training for success. Just like other mechanical devices, a man must learn to master the vacuum constriction device through instruction and daily practice. With proper training and practice, the device has fairly high success rates, but it can be cumbersome and awkward.

Third, penile injections are commonly used in men after prostate cancer treatment. Since they work directly on the penis, they tend to work in the majority of men (Albaugh & Ferrans, 2010). Penile injections, like all other treatments, have pros and cons and are not for everyone since they require self-injection prior to each sexual encounter. In addition, they can have side effects in some men. The intraurethral suppository is fairly simple to instill immediately following urination, but it is not effective in some men and some men have side effects—pain or burning is the most common side effect.

Fourth, the penile implant surgery has been around for decades and still remains a viable surgical treatment option for erectile dysfunction. The implant permanently changes the structures inside the penis, so it is a final treatment option only to be used when other options are either ineffective or undesirable. When considering each treatment option, it is important to understand how you might integrate the treatment into love-play with a partner. Each man should consult with a qualified provider to carefully examine the advantages and disadvantages of each treatment and determine the
right treatment for them.

Sex and intimacy are about pleasure. Many men will continue to enjoy affection, cuddling, genital play, and orgasms after prostate cancer treatment. The penis has functioned and become erect for most men their entire life. Thus, lack of erections, penile shrinkage, and changes in climax can be very frustrating. Men struggling with sexual dysfunction can access expert help to deal with physical or psychological issues. Professional psychological help is available in terms of education, counseling, and therapy through www.aasect.org. You can access a library of free videos on male and female sexual dysfunction at – http://www.northshore.org/urological-health/patient education/sexual-health-videos/.

More in-depth information on this topic is also available in the book I wrote for prostate cancer patients and their partners “Reclaiming Sex & Intimacy after Prostate cancer Treatment” available through Amazon.com or at www.drjeffalbaugh.com.

In addition, it is important to seek out a urology healthcare professional who can take the time to help men and their partners understand each treatment option (without any biases) and receive appropriate instruction on how to safely and effectively incorporate treatments into a man’s sex life.

After prostate cancer treatment, men and their partners can continue to have a fulfilling intimate sex life. Each man will experience changes in sex and intimacy to varying degrees and with varying importance. Most importantly, there is help and hope for sexual healing after prostate cancer treatment.

References
injections on men with erectile dysfunction after prostatectomy. Urologic Nursing, 30(1), 64-77.